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REVIEWS OF BOOKS.

Mental Development in the Child and the Race. Methods and Processes. By JAMES MARK BALDWIN. New York, Macmillan & Co., 1895. — pp. xi, 492.

The appearance of this book is a very good illustration of the tendency of modern science to seek for analogies and origins. The whole treatment is comparative and genetical. The conclusions of the book are based upon observations of childhood (apparently very carefully carried out, though somewhat too restricted in their range, one cannot help thinking, to serve as the basis of such far-reaching conclusions as are built upon them), and, as the title indicates, parallels are constantly sought between the development of the individual (ontogenesis) and that of the race (phylogenesis).

A large portion of the book is really a reproduction of a number of magazine articles, published by the author from time to time, describing observations on infants, and giving explanations and deductions. During the progress of these observations there came, as he says, "such a revelation of the genetic function of imitation," that he was inspired to set about the elaboration of a theory of mental development from this point of view. It became evident, however, during the prosecution of this task, that a consistent unfolding of this topic required also a doctrine of the race-development of consciousness,— a theory of the evolution of mind. The literature of biological evolution was then studied in the light of the doctrine of child-development thus taking shape in the author's mind; with the result that the current biological theory was modified to meet the requirements of the facts, and the whole subject of mind-growth, both in the race and in the individual, was brought under the one all-embracing principle of Imitation. One would do the author a great injustice, however, if one understood this word 'Imitation' in its ordinary meaning, which is less than half its connotation as here employed. It seems unfortunate that another term cannot be found to express this principle, and that an old familiar word has to be used in what is practically a new and strange signification. Imitation means with Professor Baldwin, a reaction in response to a stimulus, in such a way as to repeat, retain, enjoy that stimulus, provided it be vitally beneficial (or provided it be pleasant, for the two characteristics are assumed always to go together), or to avoid, withdraw from, escape that stimulus, provided it be vitally detrimental (or painful). Every student of the association-evolution psychology will at once recognize this as Dr. Bain's Law of Self-Conservation, with one or two somewhat important modifications. For instance, while both writers begin with the fundamental fact of native motor spontaneity in organisms, Professor Baldwin takes a wider view of this spontaneity, making the organism react to all kinds of stimuli, instead of confining its reaction to kinaesthetic muscular feelings, and endowing it with a certain power of selection among these stimuli. This principle is applied in the broadest possible way, and the fact of Imitation, as thus defined, is declared to exist wherever there is life. Everything in the way of response to conditions is explained by it, from the phenomena of heliotropism and geotropism in the vegetable world and the swarming of protozoa to the light, to the most delicate decisions of conscious volition in the human adult. Moreover, it is held to account, not only for that 'natural selection' through whose action the 'fittest' organisms survive, but also for 'organic selection,' by which the survival of the fittest organs and reactions in the individual is secured. It is at this point that phylogenesis and ontogenesis are brought under a single conception.

The first six chapters of the book are devoted, after some preliminary remarks on the relation between individual and race development, to the description and explanation of the author's observations of his own children. He seems to attach very little importance to all the child-observation that has hitherto been done, and to hold the view that none but psychologists (with their theories) are competent observers of children. Many of us will dissent from this opinion, and still more from his sweeping arraignment of the whole teaching profession, where he calls the teacher "a machine for administering a single experiment to an infinite variety of children," and declares that "it is perfectly certain that two out of every three children are irretrievably damaged or hindered in their mental and moral development in the school" (p. 38). But to pass on to his method of child-study. Proceeding on the principle that *motor response* is the surest index to mental content, the experiments are arranged in such a way as to measure this motor response to various stimuli. This is the dynamogenic method based directly upon the general law that the reflex arc tends to complete itself. The color-perceptions of the child were made the first subject of investigation, with the result that the chief colors in the order of attractiveness, as measured by the child's motor response (reaching for the color), stood thus: Blue, White, Red, Green, Brown. This result is quite different from that of Preyer, who puts Blue last on the list. Using the same method to investigate the rise of right- or left-handedness, it was found that dextrality developed "under pressure of muscular effort in the sixth and seventh months, and showed itself also under the influence of a strong color stimulus to the eye" (p. 65). It does not seem to be the product of differences of experience in the use of the hands, for it arose before there were any such differences; and, moreover, when it arose, the right hand was employed when the left would have been more convenient. An interesting point is the relation of speech to right-handedness: both are controlled by the same hemisphere; both are expressive functions; neither is found in the lower animals. They are evidently parts of the same function. It is likely that dextrality in children "is due to differences in the two half-brains reached at an early stage in life, that the promise of it is inherited, and that the influences of infancy have little effect upon it" (p. 74).

Suggestion (which, by the way, is only another name for the fundamental fact of Dynamogenesis), shows itself in the child under three leading aspects: (*a*) physiological suggestion, conveyed by repeated stimulation under uniform conditions; (*b*) sensori-motor suggestion, shown, *e.g.*, in the child's joyful response to the sight of her food-bottle, and in her making the proper "ducking" movements while being dressed; (*c*) ideo-motor suggestion, in which the stimulus is a clearly-pictured idea. So far, we see the *fact* of Dynamogenesis, — stimulus, followed by movement, — but the question now arises: What *kind* of action follows each special kind of stimulus? And in answer we have two possibilities: (*a*) the organism may simply do what it has done before (Habit); or (*b*) it may adapt itself to a new stimulus by a new reaction (Accommodation). The first is not difficult to understand, but Habit alone would not account for growth and life-history. Accommodations are essential to development, but how can Accommodation take place, seeing that it flies in the face of Habit and tends to break it up? To answer this question is the main business of the remaining ten chapters of the book. Put briefly, the theory is that these new accommodated reactions can take place only through the action of the stimulations themselves, which so modify the reactions of the organism that these modified reactions serve to hold or repeat the new stimulations, so far as they are good. So we have an interaction of stimulation and reaction, the former leading to an "excess discharge" of the energies of the organism, and this excess discharge leading to a selection and retention of such stimulations as are vitally beneficial. Here we see the close relation between the principles of Habit and Accommodation. Though antagonistic in some respects, yet they serve each other, inasmuch as, on the one hand, "the organism accommodates itself, or learns new adjustments, simply by exercising movements which it already has, in a heightened or excessive way," and, on the other, by the very repetition of these new movements through the excess discharge, the foundations of new habitual reactions are laid, and so "accommodation, *by the very reaction which accommodates*, hands over its gains immediately to the rule of habit."

By the aid of this law of excess, three great stages of adaptation are brought under the formula of organic selection : biological adaptations, conscious imitation, and volition. The first is seen in the responses of plants to certain stimuli, and the reactions of the brainless frog. "The ontogenetic growth of the individual starts with this fundamental adjustment of movements to the stimulations under which the phylogenetic development has so far proceeded." This is "organic imitation." The second shows the application of the law to reflex attention, memory, and thought. The principle of Identity is to be understood from the side of Habit, being the mind's demand that new experiences shall harmonize with the old ; the principle of Sufficient Reason is explicable from the side of Accommodation. The third is the highest and final stage, representing, both phylogenetically and ontogenetically, the capability of pictured and purposed actions. This arises through persistent and repeated imitative suggestion, in which the "circular process" (interaction of stimulation and response, as explained above) becomes clearly conscious. Physiologically there is now a central coördinative process, and mentally a comparison of the copy with the child's first effort, followed by further efforts, aiming at a more perfect imitation. Hence the highest volitions and the simplest reactions of the organic life, fall under a common type.

The book has certainly a very praiseworthy aim, *viz.*, to bring all the varied phenomena of growth, physical and mental, under the unity of a single principle. But, worthy as this object is, one lays Professor Baldwin's volume down with a very serious misgiving that, after all, the postulated unity is apparent rather than real, and that his zeal to propitiate the biologists has led him to content himself with a very inadequate account of the facts, *e.g.*, Attention. We must either use such words as 'excess process,' 'habit,' and 'accommodation' in an entirely new sense when we come to speak of the activity of Attention, or we must acknowledge that this activity is not only *more* but *other* than the reaction of the organism to stimulation. Organic imitation and Volition are absolutely unlike each other, and they are not made alike by being described in the same terms and with the same formulas. But perhaps it would be better to withhold criticism until the companion volume, containing "Interpretations," shall make its appearance.

F. TRACY.

Philosophy of Mind. An Essay on the Metaphysics of Psychology. By GEORGE TRUMBULL LADD, Professor of Philosophy in Yale University. New York, Charles Scribner's Sons, 1895. — pp. xiv, 414.

If the reviewer's sole function were to be critical, he would find his task a difficult one when dealing with this latest work by Professor Ladd. Instead of having the author at his mercy (as he might have fondly hoped), an examination of the book would soon convince him that that skillful book-maker has entrenched himself so strongly between his well-known psychological treatises and a yet unborn work on general philosophy, as to completely deprive the reviewer of his usual point of vantage. For Professor Ladd constantly appeals for a statement of the facts and laws of Mind to the authority of his books on psychology, and especially to the *Psychology, Descriptive and Explanatory.* Those who are acquainted with the results of the learned author's extensive labors in this field will not feel inclined to dispute his statement that the right to speculate "has been earned by careful study of the mental phenomena from all possible points of view" (p. 82). On the other hand, again, the reviewer must keep in mind the author's warning that the conclusions of the present work are only provisional. These conclusions apply, one may say, only *sub specie individualitatis*, and will all have to be reconsidered and revised "in the supreme court of general philosophy" (pp. 294, 410 *et passim*).

The table of contents and general standpoint of the book have already been indicated in a brief notice which appeared in the March issue of this REVIEW (Vol. IV, p. 230). The author's purpose, as was there stated, is to discuss more in detail than was found possible in his psychological treatises some of the metaphysical questions suggested by these earlier inquiries. The main discussions